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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/591,017	06/09/2000	Michael K. Templeton	D558	3492

7590

08/22/2003

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EXAMINER

PHAM, HOA Q

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 08/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/591,017

Applicant(s)

TEMPLETON ET AL.

Examiner

Hoa Q. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-19, 21-26 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-19, 21-26 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 10-18, 21-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munakata et al (4,827,143) in view of Yufa (6,0374,769) and Tamai (JP-411167890).

Regarding claims 10 and 22, Munakata et al (of record) teaches the use of a plurality of transmitting fibers (16) for transmitting laser beams and a plurality of receiving fibers (17) for receiving scattered light corresponding to the plurality of transmitting fibers, each fiber is located at different height with respect to the wafer (figures 1, 2, and 4). Munakata et al also teach that the number of pulses can be counted using well known technique of electrical signal processing to count the number of particles (1) (column 2, lines 33-43), however, Munakata et al does not explicitly teach that the electrical signal is converted to digital data and the processor initiates dynamics cleaning of the chamber until the particulate count reaches an acceptable level. However, such the features are known as taught by Yufa and Tamai. Yufa (of record) teaches the use of an A/D converter for converting signal to digital data (digital form pulses) and the particles is counted on the basis of the digital data (see column 4 lines 16-38). It would have been obvious to one having ordinary skill in the art at the

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time the invention was made to use a particle counting technique of Yufa into the device of Munakata. The rationale for this modification would have arisen from the fact that using digital method would increase the accuracy of the measurement. Tamai teaches that the processor (14) initiates dynamics cleaning of the chamber (5) until the particulate count (15) reaches an acceptable level (a value within the allowable range) (see abstract and figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the cleaning system of Munakata et al by a cleaning system taught by Tamai because they would function in the same manner. A substitution one for another is generally recognized as being within the level of ordinary skill in the art.

Regarding claims 11 and 23, see column 4, line 40-41 of Munakata et al, for "in-situ" counting.

Regarding claims 12-14 and 24, Munakata et al does not explicitly teach that the measuring system could be applied to laser Doppler system, interferometry, or spectrometry. However, such the features is well-known in the art, thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the system of Munakata et al into the laser Doppler system, or spectrometry for the same purpose of detecting particles in different environments.

Regarding claim 15, see column 8, lines 10-13 of Munakata et al, for display.

Regarding claim 21, see element (20, 20') in figures 3 and 4 of Munakata et al.

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Regarding claims 17-18, 22, and 25; Tamai teaches the use of exhaust valve (8) and controller (12, 14) for removing the particles out of the chamber and controlling the level of exhaust fan (inherent).

Regarding claim 28, see vessel (10, 20') in figures 4 and 8A of Munakata.

3. Claims 16, 19, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munakata et al, Yufa and Tamai as applied to claims 10 and 22 above, and further in view of Harwell et al (5,942,672) (of record).

Regarding claims 16, Munakata et al does not explicitly teach an alarm system, which sends an alarm if the contaminated particle count exceeds a predetermined threshold. However, such a feature is known in the art as taught by Harwell et al. Harwell et al, from the same field of endeavor, mentions that "the total number of particles counted during a sample window is compared to a set point representing a threshold particle count value; and if the count exceeds the threshold value, an alarm is provided by the particle sensor control" (column 2 lines 20-27). Those of ordinary skill in the art at the time the invention was made to include in Munakata et al an alarm system as taught by Harwell et al. The rationale for this modification would have been arisen from the fact that using such alarm system would alert the operator when the chamber need to be cleaned and maintained as suggested by Harwell et al in column 2 lines 24-27.

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Regarding claims 19 and 26, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in Munakata et al a mirror for the purpose of directing light to the detector if different arrangement is desired.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (703) 308-4808. The examiner can normally be reached on 6:30 AM to 5 PM, Monday through Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (703) 308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Hoa Q. Pham
Primary Examiner
Art Unit 2877

HP
August 18, 2003